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A. C. TRUE, Director.

PROGRESS IN AGRICULTURAL EDUCATION
EXTENSION.

BY

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U. S. DEPARTMENT OF AGRICULTURE,
OFFICE OF EXPERIMENT STATIONS,
Washington, D. C., April 15, 1910.

SIR: I have the honor to transmit herewith a paper on Progress in Agricultural Education Extension, by John Hamilton, Farmers' Institute Specialist of the Office of Experiment Stations, and to recommend its publication as Circular 98 of this Office.

Respectfully,

A. C. TRUE,
Director.

Hon. JAMES WILSON,
Secretary of Agriculture.

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PROGRESS IN AGRICULTURAL EDUCATION EXTENSION.

The Association of American Agricultural Colleges and Experiment Stations, at the annual meeting held at Portland, Oreg., in August, 1909, changed the constitution of the association to admit upon equality with the existing sections a third, to be known as the "Section on Extension Work."

This action indicates a tendency toward the creation of a department of extension work in each land-grant college coordinate with its interior academic work and with the research and demonstration work of the station.

THE NEED OF EDUCATION IN AGRICULTURE LONG REALIZED.

The movement of which this action was the culmination is not recent in its origin, but dates back to a period prior to the establishing of the agricultural colleges and experiment stations. Indeed, the colleges themselves exist in response to the public demand for education in agriculture, and the experiment stations were an organized attempt to satisfy the need for scientific information felt by the farmer. When farm lands first began to show exhaustion and the old and ordinary methods of culture no longer brought profitable crops the occupants of such lands moved to new soils and pursued their former methods, until large areas by this practice were impoverished and became unremunerative. Public men seeing this, and appreciating the consequences to the country if the rural districts became unproductive, began to plan for preventing further waste of soil fertility and for the restoration of worn-out and abandoned land. Conferences upon these questions became common, and societies in the form of farmers' clubs, state and county agricultural organizations, fair associations, and similar meetings of farmers were formed and the members met at stated times to discover means for arresting the decline and to provide for increasing future production.

ORGANIZATION OF THE AGRICULTURAL COLLEGE AND THE EXPERIMENT STATION.

The land-grant college, as has been intimated, was organized in response to a widespread demand for agricultural instruction, and was intended by those who created it to be a safeguard against any danger that might threaten the agriculture of the country. Great

disappointment was experienced when it was found that but few students entered these institutions, and not only that those who were admitted were imperfectly instructed in agriculture, but that the majority upon graduation went into other occupations. Agriculture had at the time of their establishment almost no literature of a scientific character comprehensive enough and sufficiently reliable to be taught. When this dearth of information became manifest, Congress, in 1887, created the agricultural experiment stations for investigation and research in agriculture.

For some years the colleges continued to languish, and the stations progressed very slowly. This was largely due to the fact that there were few men trained to teach agricultural science, and a still smaller number of others competent to undertake research and experiment work.

THE FARMERS' INSTITUTE FORM OF EDUCATION EXTENSION.

Later the farmers' institute was devised as a means of conveying agricultural truth directly to the farmers at their homes, particularly the facts discovered by the stations and taught by the colleges. In 1908-9 the institutes in the United States furnished 2½ millions of people with agricultural information, and had on their regular lecture force about 1,200 expert teachers who gave instruction in institute meetings. The effect of the institute was immediately to call attention to and create interest in agriculture and agricultural education, with the result that the number of students in agriculture and kindred studies in the agricultural colleges has increased until in 1908 there were over 16,000 taking these studies, including those entered for the two-years' course.

FARMERS' INSTITUTE WORK OF THE DEPARTMENT OF AGRICULTURE.

Recognition of the importance of the extension movement and of the need for some central office where information respecting it could be collected and from which suggestions for its improvement could be sent out led to the establishment of such an office, in charge of a farmers' institute specialist, in the Office of Experiment Stations of the Department. The duties of this specialist are defined in the bill providing for his appointment as follows:

To investigate and report upon the organization and progress of farmers' institutes in the several States and Territories and upon similar organizations in foreign countries, with special suggestions of plans and methods for making such organizations more effective for the dissemination of the results of the work of the Department of Agriculture and of the experiment stations, and of improved methods of agricultural practice.

Since its organization in 1903 the institute office in carrying out the purposes of the act creating it has collected data and published

information relating to various forms of itinerant instruction in agriculture in this and in foreign countries, such as farmers' institutes, movable schools, short courses, and demonstrations, and has cooperated with the extension departments of agricultural colleges; with the committee on extension work of the Association of American Agricultural Colleges and Experiment Stations; with the Association of Farmers' Institute Workers; the state departments of agriculture; and all other state and national organizations for the education of country people on the farms, besides conducting correspondence, preparing bulletins, circulars, illustrated lectures, courses of study for movable schools, and charts and lantern slides for use in extension teaching in agriculture.

WHAT THE INSTITUTES HAVE DEMONSTRATED.

The institutes in the course of their teaching demonstrated several important facts bearing directly upon the development of extension work. The first was that it was practicable to impart valuable scientific truth to people in the country who had never had training in science or advantages beyond a common-school education. Another was that science was a valuable aid to agriculture and only needed to have the method of its application shown to be accepted and put into practice on the farms. Scientific men also learned that the practical farmer can give out of his experience much valuable practical information to scientific men in exchange for scientific truth. Another and most important thing that the institutes did was to popularize agricultural education. They created respect for agriculture as a profession by bringing teachers of agriculture before audiences of farming people where their recommendations could be subjected to criticism and their practical value determined. They also brought the scientific experts of the experiment station in contact with practical farmers and gave them opportunity to explain the character of the work which they were performing in aid of agriculture.

STANDING COMMITTEE ON AGRICULTURAL EXTENSION WORK.

There was another organization at work in developing the extension idea that was most important. The Association of American Agricultural Colleges and Experiment Stations in 1905 became interested in the extension movement and appointed a standing committee on extension work to investigate and report upon the condition and progress of this work and to recommend to the colleges and stations means whereby they could forward the movement and increase its efficiency. The United States Department of Agriculture cooperated with this committee, and the committee, after making a general inquiry to discover the actual condition of extension work of all kinds throughout the country, reported the results to the association each

year until in 1909 it recommended the action which the association took at its Portland meeting.

EXTENSION IN AGRICULTURAL EDUCATION A NECESSITY.

It was evident at the outset to those who gave even slight attention to the question that even if the agricultural colleges were filled with all of the students that they could possibly teach, a small percentage only of the people who were in need of agricultural instruction could be reached by this method. It was also clear that if the stations were to greatly add to the number and value of their discoveries there was at hand no adequate means for getting the information into practice by the people. Some method additional to those in use by the colleges and stations would have to be devised and employed if the masses of agricultural people were to be reached with instruction adapted to their needs.

ACTION AT PORTLAND CAREFULLY CONSIDERED.

The action of the Association of American Agricultural Colleges and Experiment Stations at Portland was taken after considerable experience derived from actual participation by the members of the association in extension work as conducted by the colleges as well as in the farmers' institute field. In thirty States and Territories the farmers' institutes had been wholly or in part under the direction of the agricultural colleges and experiment stations, and in all of the other States where the work was under outside control members of the college faculty and of the experiment station force had been teaching in the institutes. In 1908, 418 members of the college faculties and experiment station staffs were reported as having been engaged in institute work during the preceding year. In these ways the colleges and stations gradually became familiar with extension methods, and were able to act intelligently when these methods as a means of educating rural people came before them for approval.

EXTENSION BY THE AGRICULTURAL COLLEGES.

About the time that the standing committee of the association was appointed a number of the colleges took up of their own accord the organization of extension departments independent of their farmers' institute work. This has continued until now twenty-six States^a have departments equipped for extension work. In Minnesota \$25,000 a year has been appropriated for extension work in addition to \$18,000 for farmers' institutes; in Colorado, \$5,000; in Georgia, \$10,000; in Indiana, \$10,000; in Iowa, \$32,000; in Kansas,

^aCalifornia, Colorado, Illinois, Georgia, Idaho, Indiana, Iowa, Kansas, Maine, Massachusetts, Minnesota, Mississippi, Missouri, Montana, New York, North Carolina, North Dakota, Ohio, Pennsylvania, Rhode Island, South Carolina, South Dakota, Utah, Washington, West Virginia, and Wisconsin.

\$26,000; in Massachusetts, \$7,500; in New York, \$50,000; in Ohio, \$20,000; in Washington, \$8,750; in West Virginia, \$3,000; and in Wisconsin, \$25,000.

ORGANIZATION FOR EXTENSION WORK IN IOWA.

Agricultural extension work in the several institutions differs both in form of organization and in methods of conducting the work. In Iowa agricultural extension is established as a department in the agricultural division of the agricultural college, and the head of the agricultural extension department bears the same relation to the dean or head of the agricultural division as is borne by heads of other departments in the division of agriculture. The head of the agricultural extension work and other instructors, lecturers, and employees in that department are appointed in the same way that the heads, professors, and employees of other departments are appointed. The appropriation by the State for the support of the work is distinct from the other appropriations for the institution, and the itinerant teaching and field demonstrations are conducted by the extension director with his own department force, independent of those in charge of interior instruction work in the institution.

The extension department pays the salaries of its instructors, while the traveling, hotel, and other expenses of the extension force are met by the communities in which the courses are given. A matriculation fee of \$3 for men and \$2 for women is usually charged to those taking the course and a pledge signed by at least 200 persons is required as a guaranty against any deficiency that the receipts from the tuition fees, private contributions, and sales of material may fail to meet.

Instruction in the extension courses consists of lectures by the teachers and demonstration and judging exercises by the students. Three courses have thus far been provided for these schools—one in corn growing, another in stock breeding and rearing, and a third in domestic science. The courses are continued for one week. The students are examined at the close of the course, whereupon a certificate of proficiency is given to those who successfully pass the examinations. For students who have taken the first-year course an advanced or second-year course is provided, consisting of studies in horticulture, soils, poultry, and domestic science. A carload of stock, consisting of 2 horses, 3 head of cattle, 4 sheep, and 4 head of swine, was taken along for demonstration purposes last year. These animals were supplemented by stock supplied by each neighborhood where the course was given.

Making arrangements for holding the courses is committed to the community in which they are to be held. A local committee or executive board is formed by the citizens, consisting of a president,

a secretary, a general manager, a treasurer, and chairmen for each of the following committees: Advertising committee, domestic-science committee, stock-judging committee, grain-growing committee, contests and exhibits committee, and an entertainment committee.

As soon as a suitable guaranty fund is secured application is made to the extension department of the college of agriculture for a short course in that community. If the application is granted, the local executive board, through its committees and in consultation with the director of extension work, makes all the necessary arrangements for holding the course and assumes all responsibility, outside of the actual teaching, for its conduct and success. Ten such courses were held last year, and 50 applications are on file for similar courses for the coming winter. A force of 15 men and women is regularly employed by the extension department, and this number is practically doubled during the season of short-course work. During the year ended June 30, 1908, 2,342 men and 1,318 women were enrolled as students in the short courses in Iowa.

The extension department also carries on field demonstrations in agriculture on the county poor farms and holds summer and autumn meetings at these farms for inspection of the experiments and to learn the results. Work has also been undertaken for the improvement of the secondary schools and the preparation of teachers for giving agricultural instruction in the rural schools.

EXTENSION ORGANIZATION IN INDIANA.

In Indiana agricultural extension is made a department of the experiment station. The state legislature in 1909 made a continuous appropriation to the experiment station in the sum of \$75,000 annually, distributing the amount among the several departments of the station—\$15,000 to farm crops and soils; \$5,000 to hog-cholera investigations; \$5,000 to poultry investigations; and the balance, \$50,000, was equally distributed among animal industry, dairying, horticulture, station expenses, and agricultural extension. The extension division is composed of a chief executive, known in the college faculty as “professor of agricultural extension” and by the station staff as “superintendent of agricultural extension,” whose salary, together with that of a clerk and that of a stenographer and typewriter, is paid from the state appropriation for extension work. The additional expert teaching force in the extension department is supplied from the other divisions of the experiment station and is paid from the appropriations made to these several divisions.

The following official action by the faculty of the institution defines the purpose, organization, and status of the extension department:

That the extension department of the agricultural experiment station should be organized so as to provide the machinery necessary for projecting and promoting the

work of the several departments of the station and placing valuable information before the farmers of the State; that all extension projects should be considered in a conference of the heads of departments of the station, who shall determine their desirability and feasibility and approve the general plan of work; that the several departments of the station shall, through their respective heads, cooperate as far as possible with the extension department through its head in carrying out the work agreed upon; that each one of the several departments shall provide a man who shall be available to do extension work agreed upon under the general conduct of the superintendent of extension, and that the department head shall be responsible for the kind of information and the method of presenting the same to the public.

The methods employed for holding the district short courses are substantially the same as those adopted in Iowa. A guaranty pledge signed by at least 150 persons is required from each community to meet any deficiency that may occur. A premium list is also to be provided for the best exhibits of corn, small grain, fruits, poultry, butter, and cooking. There is also a local executive board. The president of the board appoints two or more persons to work with the chairman of each committee. The total cost of the district short course, not including the premium list, is from \$450 to \$600. No charge is made for the service of the lecturers, but the local management of the short course is expected to pay their necessary traveling and hotel expenses. The services of such assistants as may be necessary are to be paid for by the committee, as well as all local expenses.

Three of these district short courses were all that could be held last year, although 8 applications accompanied with proper guaranties were received. The extension department ran a butter train and proposes to add corn, fruit, and live-stock trains during the coming year. Exhibits were made by this extension department at 10 county fairs. Orchard spraying was held throughout the State, and during the coming year an effort will be made to hold a demonstration of this character in every county. Forty-five boys' clubs have been organized, and from these 145 boys were sent up to Purdue University for the farmers' short courses in the winter of 1909-10.

EXTENSION ORGANIZATION IN OHIO.

A third type of agricultural extension organization is found in Ohio. In this State the extension work is organized as a department of the college of agriculture and domestic science of the university and is under the general direction of a board composed of 5 members, 2 from the board of trustees, with the president of the university, the dean of the college of agriculture, and the superintendent of agricultural extension work. This board prescribes the course of study, determines the location of the schools, and has general direction of the work. The superintendent of extension work is the executive officer of the board and also is a member of the faculty of the college of agriculture.

The corps of extension workers is organized by detailing teachers from the instruction force of the various departments of the university to serve for stated periods as the needs of the extension courses require. In order that the most experienced men may be at liberty to engage in extension teaching, additional instructors are employed by the institution to take care of the regular class-room work of the professors during their absence, and from time to time these instructors accompany the professors in their itinerant work and engage in extension teaching under their supervision. In this way the college strives to make sure that only reliable men are representing it in the field and is at the same time training a body of young men as extension workers and also as teachers in the interior instruction work of the institution.

Before an application for a short-course school is granted assurance must be given by the locality that suitable rooms for the accommodation of the school have been secured, properly heated, lighted, and furnished, and that sufficient janitor service will be employed to care for the rooms and render such additional assistance as may be necessary. There must also be at least 50 properly receipted membership cards filed with the college of agriculture ten days before the opening of the school, and at least 25 persons must sign a pledge to meet any deficiency that may arise in the local expenses.

The courses offered are in soil fertility, farm crops, live stock, dairying, horticulture, and home making. These are each accompanied by suitable practice and demonstration exercises. Thirty-five schools of this character were planned for the season beginning September 6, 1909, and ending April 1, 1910.

The legislature in providing for the support of extension work has directed that not more than one school shall be held in any county during the year, and that no school shall exceed one week in duration; also that no part of the appropriation shall be available for rent, light, heat, janitor service, or other local expenses.

In addition to conducting short-course schools the college gives instruction and demonstrations in various lines of agriculture at agricultural fairs, institutes, granges, and clubs, or in connection with other organizations that in the judgment of the college may be useful in extending agricultural knowledge.

ORGANIZATION IN IOWA, INDIANA, AND OHIO TYPICAL.

The forms of organization of the agricultural extension departments in the three States of Iowa, Indiana, and Ohio have been presented because they differ from each other in important respects and are typical of the methods that have been adopted in connecting the administration of the extension feature of instruction with that of the college in its interior work and of the experiment station in its work of research. Extension work in Iowa is a separate department of the

institution; in Indiana it is organized in connection with the experiment station, and in Ohio is connected with the College of Agriculture and Domestic Science.

These States likewise furnish typical examples of cooperation between the extension departments and the various forms of farmers' institute organization. In Iowa the institutes are altogether under local or county control; in Indiana they are administered by the university, while in Ohio they are under the management of the state board of agriculture in cooperation with the county institute boards. Under all of these forms of administration there has not only been no conflict in carrying on the work, but the most cordial cooperation.

PROGRESS OF EXTENSION WORK NOT MEASURED BY VISIBLE RESULTS.

The number of States that have taken up the work and the extent to which they are conducting it do not adequately represent the progress that has been made. The main development has not yet assumed visible form, but is rather in widened view of the subject of extension in education by educators in agriculture, and appreciation of its importance by the general public. More important than either of these, perhaps, is that of an enlightened and awakened conscience on the part of those in charge of agricultural education in the agricultural colleges and experiment stations which has brought them to a realization of the responsibility of their institutions for the education of the masses. Most of these educators and officials not long ago were satisfied to provide education merely for those who came to their institutions as resident students. The feeling was quite general that responsibility in education extends no further than the confines of the college grounds. Attitude in this respect has recently undergone a radical change.

AGRICULTURAL EDUCATION EXTENSION AN IMPORTANT RURAL PROBLEM.

It is now realized that the dissemination of agricultural information, or in other words extension work in agriculture, is an important feature of agricultural education.

The farmer must be reached with information adapted to his needs if agriculture is to improve sufficiently and rapidly enough to supply the increasing population through future years. Only a short time ago there was a dearth of information of value to agricultural people; now there is more than can be effectively distributed with the present machinery. Methods of education in agriculture adapted to resident students have been developed, and a vast amount of reliable knowledge adapted to practical use by farmers has been accumulated through researches and investigations by the experiment stations and like agencies. But the educational system has

failed to reach the masses, and particularly it has failed to get the known truths of agriculture into the practice of the every-day farmer. The present methods of dissemination are confessedly inadequate. Some system of extension teaching is therefore a necessity if agriculture in the United States is to develop in time to meet the needs of the multitudes who are to people this country in years to come.

PROBLEMS IN AGRICULTURAL EDUCATION EXTENSION.

There are many problems connected with the extension movement of education in agriculture—the utilization of existing organizations, such as the granges, the boards of agriculture, horticulture, and forestry, and similar societies, county agricultural societies and associations, the agricultural press, and farm clubs; the preparation of teachers for giving instruction and advice in agriculture, both for the farmers' institutes, the normal and high schools, and the rural public schools.

THE MOST PRESSING NEED IN AGRICULTURAL EDUCATION EXTENSION.

Perhaps the first and most pressing need in the direction of extension education is the systematizing of its methods; that is, a general agreement upon courses of study and methods of procedure that shall be adopted as a basis of effort. There is needed a well-defined, clear-cut course or set of courses of study and practice which will not only convey agricultural information and skilled acquaintance with methods of practice to farmers, but which will also provide at the same time proper mental culture and development. There is needed, too, more than all else, a well-organized system for getting this information to country people and for imparting it in an effective and attractive manner.

A PARTIAL SOLUTION OF THE EXTENSION PROBLEM.

The way is now clear, so far as public appreciation of agricultural instruction and the amount and quality of educational material available are concerned, for the introduction of schools of agriculture, both movable and fixed, into every rural settlement in the United States. Such schools, operated in connection with a force of agricultural experts who visit country communities and give advice on the ground, will put farmers in touch with the most important scientific truths relating to their profession as rapidly as they are discovered, and will also aid greatly in securing the introduction of improved methods into the every-day practice of the great body of agricultural people. The forming of classes in agriculture in the normal schools for teachers and in the upper grades of high schools is also a direction in which extension departments may find a field almost entirely unoccupied and full of possibilities of lasting good in elevating country life.



